

Appl. No. 10/065,169
Amdt dated February 6, 2004
Reply to Office Action of November 06, 2003

Amendments to the Claims

This listing of claims will replace all prior versions and listing of claims in the application:

Listing of Claims:

1. (currently amended) A redundancy unit comprising:
a first fuse block comprising at least one first-type fuse;
a second fuse block comprising at least one second-type fuse; and
a redundant element coupled to the first and second fuse blocks, the redundant element can be programmed by either the first or second fuse blocks.
2. (original) The redundancy unit of claim 1 repairs defects in an integrated circuit.
3. (original) The redundancy unit of claim 1 wherein the redundant element repairs defects in a memory array.
4. (original) The redundancy unit of claim 3 wherein the redundant element comprises a memory cell.
5. (original) The redundancy unit of claim 3 wherein the redundant element comprises memory cells for row redundancy.
6. (original) The redundancy unit of claim 3 wherein the redundant element comprises a memory cells for column redundancy.

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7. (currently amended) ~~The redundant unit of claim 1~~ A redundancy unit comprising:
a first fuse block comprising at least one first fuse;
a second fuse block comprising at least one second fuse; and
a redundant element coupled to the first and second fuse blocks, the redundant element
can be programmed by either the first or second fuse blocks, wherein the first fuse comprises a
laser blowable fuse and the second fuse comprises an electrical fuse.
8. (original) The redundancy unit of claim 7 further comprises a selection circuit coupled to between the fuse blocks and redundancy element, the selection circuit selecting either the first or second fuse block for programming the redundancy unit.
9. (original) The redundancy unit of claim 8 wherein the selection circuit comprises an OR or an XOR gate.
10. (original) The redundant unit of claim 7 wherein the electrical fuse comprises an electrical blowable fuse.
11. (original) The redundancy unit of claim 10 further comprises a selection circuit coupled to between the fuse blocks and redundancy element, the selection circuit selecting either the first or second fuse block for programming the redundancy unit.
12. (currently amended) The redundancy unit of claim ~~10~~ 11 wherein the selection circuit comprises an OR or an XOR gate.

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13. (original) The redundant unit of claim 7 wherein the electrical fuse comprises an anti-fuse.

14. (original) The redundancy unit of claim 13 further comprises a selection circuit coupled to between the fuse blocks and redundancy element, the selection circuit selecting either the first or second fuse block for programming the redundancy unit.

15. (currently amended) The redundancy unit of claim ~~13~~ 14 wherein the selection circuit comprises an OR or an XOR gate.

16. (currently amended) ~~The redundancy unit of claim 1 further comprises~~ A redundancy unit comprising:

a first fuse block comprising at least one first fuse;

a second fuse block comprising at least one second fuse;

a redundant element coupled to the first and second fuse blocks, the redundant element can be programmed by either the first or second fuse blocks; and

a selection circuit coupled to between the fuse blocks and redundancy element, the selection circuit selecting either the first or second fuse block for programming the redundancy unit.

17. (original) The redundancy unit of claim 16 wherein the selection circuit comprises an OR or an XOR gate.

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18. (new) The redundant unit of any one of claims 2-6 wherein the first-type fuse comprises a laser blowable fuse and the second-type fuse comprises an electrical fuse.
19. (new) The redundancy unit of claim 18 further comprises a selection circuit coupled to between the fuse blocks and redundancy element, the selection circuit selecting either the first or second fuse block for programming the redundancy unit.
20. (new) The redundancy unit of claim 19 wherein the selection circuit comprises an OR or an XOR gate.
21. (new) The redundancy unit of any one of claims 2-6 further comprises a selection circuit coupled to between the fuse blocks and redundancy element, the selection circuit selecting either the first or second fuse block for programming the redundancy unit.
22. (new) The redundancy unit of claim 21 wherein the selection circuit comprises an OR or an XOR gate.
23. (new) A redundancy block which includes x number of redundancy units, wherein x is a whole number greater than 1, the redundancy block comprises:
y number of first redundancy units, wherein y is a whole number greater than or equal to 1, but less than or equal to x, wherein a first redundancy unit includes
a first redundancy unit first fuse block comprising at least one first-type fuse;

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a first redundancy unit second fuse block comprising at least one second-type fuse; and

a first redundancy unit redundant element coupled to the first and second fuse blocks, the redundant element can be programmed by either the first redundancy unit first or second fuse blocks; and

z number of second redundancy units, wherein z is a whole number and is equal to x-y, wherein a second redundancy unit includes

a second redundancy unit fuse block comprising at least one first-type fuse

a second redundancy unit redundant element coupled to the second redundancy unit fuse block, the second redundancy unit redundant element can be programmed by the second redundancy unit fuse block.

24. (new) The redundancy block of claim is incorporated into an integrated circuit.
25. (new) The redundant unit of claim 23 or 24 wherein the first-type fuse comprises a laser blowable fuse and the second-type fuse comprises an electrical fuse.
26. (new) The redundancy unit of claim 25 further comprises a selection circuit coupled to between the fuse blocks and redundancy element, the selection circuit selecting either the first or second fuse block for programming the redundancy unit.

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27. (new) The redundancy unit of claim 23 or 24 further comprises a selection circuit coupled to between the fuse blocks and redundancy element, the selection circuit selecting either the first or second fuse block for programming the redundancy unit.